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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C 1400 PAGE MILL ROAD PALO ALTO, CA 94304-1124				
			EXAMINER GOFF II, JOHN L	
			ART UNIT 1733	PAPER NUMBER

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/734,008

Applicant(s)

BUNCH ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This action is in response to the arguments filed on 6/7/06. Applicant's arguments, see pages 8 and 9, filed 6/7/06, with respect to the rejection(s) of claim(s) 1-9, 12-17, and 19-25 under 35 USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Teichi et al. (WO 01/609380) and Tanaka et al. (U.S. Patent 4,376,194).

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Election/Restrictions***

3. Applicant's election without traverse of Group I, claims 1-26, in the reply filed on 6/7/06 is acknowledged.

### ***Claim Rejections - 35 USC § 102/103***

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 19-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hacker et al. (U.S. Patent Application Publication 2002/0002265).

Hacker et al. disclose a method of producing a composition having excellent planarization properties comprising a novolac resin and a solvent added thereto (Paragraphs 5, 8, 18, 19, 21, and 22). Hacker et al. teach the solvent comprises for example any of those disclosed in claim 24 including (only) ethyl acetate (a solvent having a boiling point of 77 °C) (Paragraph 18). It is noted a novolac resin is considered a resist adhesive resin as evidenced by claim 23. Furthermore, one of ordinary skill in the art at the time the invention was made would have readily appreciated that a novolac resin as taught by Hacker et al. is considered a resist adhesive resin as both comprise the same.

Regarding claim 20, Hacker et al. teach the novolac resin is present in an amount of 1 to 90 wt.%, e.g. preferably about 10 to about 50 wt.%, (Paragraph 19) such that the claim limitation is met. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine the particular novolac resin content within the range taught by Hacker et al. as a function of the planarization properties of the resin as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding the limitation “of improving the adhesive characteristics of an adhesive composition for use in bonding a ceramic material to a manufacturing tool” as stated in the preamble, it is noted this limitation is merely intended use and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the

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improved composition produced by Hacker et al. is capable of being used in this manner (See MPEP 2111.02).

6. Claims 19 and 21-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Uetani et al. (U.S. Patent Application Publication 2001/0026905).

Uetani et al. disclose a method of producing a resist composition comprising a novolac resin and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (Paragraphs 10 and 22). It is noted the novolac resin taught by Uetani et al. is considered a resist adhesive resin as evidenced by claim 23. Furthermore, one of ordinary skill in the art at the time the invention was made would have readily appreciated that the novolac resin taught by Uetani et al. is considered a resist adhesive resin as both comprise the same.

Regarding the limitation “of improving the adhesive characteristics of an adhesive composition for use in bonding a ceramic material to a manufacturing tool” as stated in the preamble, it is noted this limitation is merely intended use and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the improved resist composition produced by Uetani et al. is capable of being used in this manner (See MPEP 2111.02).

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7. Claims 19 and 21-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Teiichi et al. (WO 01/60938 with U.S. Patent Application Publication 2003/0069331 used as a translation).

Teiichi et al. disclose a method of producing an adhesive composition having excellent heat and moisture resistance with no volatilization for bonding a substrate, e.g. a ceramic material, to another substrate, e.g. ceramic semiconductor chip, comprising an epoxy adhesive resin, e.g. novolac resin, and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (Paragraphs 1, 31, 33, 131, 137, 145, and 152). It is noted the epoxy adhesive resins taught by Teiichi et al. are considered resist adhesive resins.

Furthermore, one of ordinary skill in the art at the time the invention was made would have readily appreciated that the epoxy adhesive resins, e.g. novolac resin, taught by Teiichi et al. are considered resist adhesive resins as both comprise the same.

Regarding the limitation “of improving the adhesive characteristics of an adhesive composition for use in bonding a ceramic material to a manufacturing tool” as stated in the preamble, it is noted this limitation is merely intended use and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the improved composition produced by Teiichi et al. is capable of being used in this manner (See MPEP 2111.02).

***Claim Rejections - 35 USC § 103***

8. Claims 15-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz (U.S. Patent 5,406,694) in view of Teiichi et al.

Ruiz discloses a method of forming a slider for a hard disk drive including providing a ceramic chunk (40 of Figure 6) from a wafer and bonding the air bearing side of the ceramic chunk to a ceramic manufacturing tool (50 of Figure 6) through a layer of thermoset adhesive (Figure 6 and Column 1, lines 6-8 and Column 5, lines 35-38 and Column 7, lines 38-49). Ruiz does not specifically describe using an adhesive including a solvent. Teiichi et al. disclose a method of producing a thermoset adhesive composition having excellent heat and moisture resistance with no volatilization for bonding a ceramic substrate, e.g. a ceramic material, to another ceramic substrate, e.g. semiconductor chip, comprising an epoxy adhesive resin, e.g. novolac resin, and a solvent added thereto such as (only) acetone (a solvent having a boiling point between 30 and 80 °C) (Paragraphs 1, 31, 33, 131, 137, 145, and 152). It would have been obvious to one of ordinary skill in the art at the time the invention was made to adhere the ceramic chunk to the ceramic manufacturing tool as taught by Ruiz using the thermoset adhesive including solvent taught by Teiichi et al. which has excellent heat and moisture resistance with no volatilization. It is noted the novolac adhesive resins taught by Teiichi et al. are considered resist adhesive resins. Furthermore, one of ordinary skill in the art at the time the invention was made would have readily appreciated that the novolac adhesive resin taught by Teiichi et al. are considered resist adhesive resins in the art as both comprise the same.

Regarding claim 20, Teiichi et al. do not specifically disclose the amount of novolac adhesive resin in the adhesive composition. Absent any unexpected results, it would have been

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obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular novolac adhesive resin content in Ruiz as modified by Teiichi et al. as a function of the heat and moisture resistance properties of the adhesive composition as doing so would have required nothing more than ordinary skill and routine experimentation.

9. Claims 1-10 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz and Teiichi et al. as applied to claims 15-26 above, and further in view of Tanaka et al. (U.S. Patent 4,376,194).

Ruiz and Teiichi et al. as applied above teach all of the limitations in claims 1-10 and 12-14 except for a specific teaching of applying the adhesive composition to bond the ceramic chunk to the ceramic manufacturing tool by applying the adhesive composition to the ceramic chunk, contacting the ceramic manufacturing tool with the adhesive composition on the surface of the ceramic chunk to bond the tool and chunk, and subjecting the adhesive composition located between the ceramic chunk and ceramic tool to conditions effective to remove the solvent from the adhesive. Teiichi et al. teach applying the adhesive composition to bond two substrates by first forming the adhesive composition into an adhesive film, placing the adhesive film, between the two substrates, and contacting the substrates and adhesive film to bond the two substrates, but Teiichi et al. are not limited to this method (Paragraph 148). Tanaka et al. disclose applying an adhesive composition including a solvent to bond two substrates by applying the adhesive composition to a first substrate, contacting a second substrate with the adhesive composition on the surface of the first substrate to bond the first and second substrates, and subjecting the adhesive composition located between the substrates to conditions effective remove the solvent from the adhesive (Column 8, lines 46-52). Tanaka et al. also note as an



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alternative forming the adhesive into a film and then bonding the two substrates (Column 8, lines 20-22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the adhesive composition as taught by Ruiz as modified by Teiichi et al. by applying the adhesive composition to the ceramic chunk, contacting the ceramic manufacturing tool with the adhesive composition on the surface of the ceramic chunk to bond the tool and chunk, and subjecting the adhesive composition located between the ceramic chunk and ceramic manufacturing tool to condition effective to remove the solvent from the adhesive as shown by Tanaka et al. to avoid the extra step of forming the adhesive composition into a film.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz, Teiichi et al., and Tanaka et al. as applied to claims 1-10 and 12-14 above, and further in view of Schafer (U.S. Patent 5,421,884).

Ruiz, Teiichi et al, and Tanaka et al. as applied above teach all of the limitations in claim 11 except for a specific teaching of using vacuum conditions to remove the solvent from between the ceramic chunk and ceramic manufacturing tool. Schafer is exemplary of the known technique for removing solvent from an adhesive in the microelectronics industry by applying vacuum and heat conditions to the adhesive to remove substantially all air bubbles and solvent inclusions within the adhesive (Column 1, lines 29-34 and Column 3, lines 30-39). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Ruiz as modified by Teiichi et al. and Tanaka et al. vacuum conditions to remove the solvent from the adhesive as shown for example by Schafer to remove substantially all air bubbles and solvent inclusions within the adhesive.

***Response to Arguments***

11. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue, "The composition of Hacker differs from that of the present claims by requiring a surfactant (*see* Abstract, as well as numerous other cites in the specification) and only optionally requiring a solvent (0018, line 1).".

The claims are not commensurate in scope with this argument as the claims do not exclude a surfactant. Furthermore, there is an express teaching of using a solvent in Hacker et al. such that the claim limitations are met.

Applicants further argue, "Hacker does not teach or suggest the use of a resist adhesive to join two items, as Hacker relates to a different use of a resist adhesive resin.".

The claims are not commensurate in scope with this argument as the claims do not require joining two items.

Applicants further argue, "The examiner asserts that the preamble of claim 19 is essentially to be ignored because it does not add any structural limitations to the claim. Applicants point out that the elected claims 1-26 are method of use claims, and that the particular use of a composition is very important in such claims.".

Claim 24 requires adding a solvent having a particular boiling point to a resist adhesive resin wherein Hacker et al. disclose the same. The preamble of claim 24 merely states the intended use of the composition formed by the method of claim 24. As previously noted the composition taught by Hacker et al. is capable of performing the claimed intended use, and applicants have not shown otherwise.

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***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John L. Goff